

**TABLE 1**  
**FORMER WELLS RANCH 42-30 WELLHEAD**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**CONTAMINANTS OF CONCERN**

Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(4)</sup> (mg/kg)	Chrysene (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Selenium (mg/kg)
Residential SSL <sup>(1,2)</sup>			1.2	490	5.8	58	30	27	2	500	110	180	18	24	0.68	15,000	71	3,100	400	390
Protection of Groundwater SSL <sup>(1,2,3)</sup>			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	9	1.3	0.006	0.019	0.29	82	0.38	46	14	0.26
WH01 @ 6'	1/26/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	0.0165	0.00899	<b>0.00683</b>	0.00627	<b>9.60</b>	<b>231</b>	<b>0.434</b>	<b>156</b>	<b>528</b>	<b>1.54</b>
FLR01 @ 4'	1/26/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	NA	NA	NA	NA	NA	NA
FL01-02 @ 4'	1/26/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS01 @ 7'	2/28/2022	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	240	0.00998	<0.00500	<0.00500	<0.00500	P	P	P	P	P	P
SS03 @ 6'	2/28/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	P	P	P	P	P	P
SS05 @ 6'	2/28/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	P	P	P	P	P	P
SS07 @ 6'	2/28/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	P	P	P	P	P	P
SS09 @ 6'	2/28/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	P	P	P	P	P	P

**Notes:**

- Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
  - Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
  - SSLs are applicable if a pathway for communication with groundwater is present.
  - Value calculated by adding TVPH-GRO, TEPH-DRO, and TEPH-ORO concentrations.
- COGCC = Colorado Oil and Gas Conservation Commission  
(<) = Analytical result is less than the indicated laboratory reporting limit.  
TVPH-GRO = Total volatile petroleum hydrocarbons - gasoline range organics  
TEPH-DRO = Total extractable petroleum hydrocarbons - diesel range organics  
TEPH-ORO = Total extractable petroleum hydrocarbons - oil range organics  
M = Methylinaphthalene  
mg/kg = Milligrams per kilogram  
TMB = Trimethylbenzene  
= Source material characterization sample  
ft. = Feet  
bgs = Below ground surface  
**BOLD** = Analytical result is in exceedance of applicable standard and above 1.25x background concentration.  
NA = Constituent Not Analyzed  
P = Analytical Results Pending

**TABLE 2**  
**FORMER WELLS RANCH 42-30 WELLHEAD**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard <sup>(1)</sup>			6-8.3	<4	<6	2
WH01 @ 6'	1/26/2022	6 ft. bgs	<b>8.73</b>	0.0739	0.0764	0.627
FLR01 @ 4'	1/26/2022	4 ft. bgs	<b>8.81</b>	0.0423	0.0748	0.236
SS02 @ 2.5'	2/28/2022	2.5 ft. bgs	7.91	1.35	0.0515	0.0557

**Notes:**

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

ft. = Feet

  = Source material characterization sample

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of applicable standard.

**TABLE 3**  
**FORMER WELLS RANCH 42-30 WELLHEAD**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**ORGANIC COMPOUNDS - PAHs**

Sample ID	Date Sampled	Depth	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL <sup>(1,2)</sup>			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL <sup>(1,2,3)</sup>			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
WH01 @ 6'	1/26/2022	6 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0165	<0.00500	<0.00500	<0.00500	<0.00500	0.00899	<b>0.00683</b>	0.00627
FLR01 @ 4'	1/26/2022	4 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

**Notes:**

- Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- SSLs are applicable if a pathway for communication with

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

PAHs = Polycyclic aromatic hydrocarbons

Benz(a) = Benzanthracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzo(a)fluoranthene

Benzo(k) = Benzo(a)fluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylanthracene

mg/kg = Milligrams per kilogram

ft. = Feet

  = Source material characterization sample

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of applicable standard.

NA = Constituent Not Analyzed

**TABLE 4**  
**FORMER WELLS RANCH 42-30 WELLHEAD**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**METALS**

Sample ID	Date Sampled	Depth	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL <sup>(1,2)</sup>			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL <sup>(1,2,3)</sup>			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
WH01 @ 6'	1/26/2022	6 ft. bgs	9.60	231	0.434	<0.30 <sup>(4)</sup>	156	528	15.6	1.54	0.114	84.3
BKG01 @ 4'	1/26/2022	4 ft. bgs	1.56	33.6	<0.211	<0.30 <sup>(4)</sup>	2.23	2.80	2.36	0.364	<0.0211	10.5
BKG01 @ 6'	1/26/2022	6 ft. bgs	1.31	38.4	<0.211	<0.30 <sup>(4)</sup>	2.10	2.65	2.39	0.380	<0.0211	10.8
BKG02 @ 2.5'	2/28/2022	2.5 ft. bgs	1.32	79.2	<0.215	<0.30 <sup>(4)</sup>	3.56	4.59	3.61	0.508	0.0254	14.2
BKG02 @ 6'	2/28/2022	6 ft. bgs	1.39	84.0	<0.211	<0.30 <sup>(4)</sup>	2.88	4.20	3.44	0.496	<0.0211	12.8
BKG02 @ 7'	2/28/2022	7 ft. bgs	1.68	85.4	<0.216	<0.30 <sup>(4)</sup>	4.25	5.10	4.93	0.620	0.0313	17.3
BKG03 @ 2.5'	2/28/2022	2.5 ft. bgs	1.43	67.8	<0.215	<0.30 <sup>(4)</sup>	3.70	4.49	3.81	0.541	0.0217	14.4
BKG03 @ 6'	2/28/2022	6 ft. bgs	1.35	80.2	<0.212	<0.30 <sup>(4)</sup>	2.86	4.10	3.65	0.492	0.0249	13.4
BKG03 @ 7'	2/28/2022	7 ft. bgs	1.83	96.1	<0.213	<0.30 <sup>(4)</sup>	3.65	4.84	4.98	0.607	0.0294	17.8

**Notes:**

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

4. Compound falls within COGCC Table 915-1 Footnote 9.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

Source material characterization sample

ft. = Feet

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of applicable standard.

**TABLE 5**  
**FORMER WELLS RANCH 42-30 WELLHEAD**  
**FIELD DATA SUMMARY TABLE**

Sample ID	Date Sampled	Depth	GPS Data <sup>(1)</sup> Latitude / Longitude		PDOP Value	VOC Concentration <sup>(2)</sup> (ppm)
WH01 @ 6'	1/26/2022	6 ft. bgs	40.459285	-104.473307	2.5	0.0
FLR01 @ 4'	1/26/2022	4 ft. bgs	40.459285	-104.473319	1.5	0.5
WHS01-S @ 0-6"	1/26/2022	0-6 in. bgs	40.459225	-104.473283	1.3	0.0
WHS01-E @ 0-6"	1/26/2022	0-6 in. bgs	40.459323	-104.473200	1.1	0.0
WHS01-N @ 0-6"	1/26/2022	0-6 in. bgs	40.459355	-104.473330	1.1	0.0
WHS01-W @ 0-6"	1/26/2022	0-6 in. bgs	40.459308	-104.473420	1.2	0.0
BKG01 @ 4'	1/26/2022	4 ft. bgs	40.459171	-104.473572	0.9	0.1
BKG01 @ 6'	1/26/2022	6 ft. bgs	40.459171	-104.473572	0.9	0.1
FL01-01 @ 4'	1/26/2022	4 ft. bgs	40.459898	-104.473338	1.2	0.0
FL01-02 @ 4'	1/26/2022	4 ft. bgs	40.460952	-104.473339	1.1	0.1
FL01-03 @ 4'	1/26/2022	4 ft. bgs	40.462371	-104.472876	1	0.2
SS01 @ 7'	2/28/2022	7 ft. bgs	NC	NC	NC	0.0
SS02 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459266	-104.473293	1.2	0.0
SS03 @ 6'	2/28/2022	6 ft. bgs	40.459266	-104.473293	1.2	0.0
SS04 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459300	-104.473280	1.1	0.0
SS05 @ 6'	2/28/2022	6 ft. bgs	40.459300	-104.473280	1.1	0.0
SS06 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459289	-104.473321	1.1	0.0
SS07 @ 6'	2/28/2022	6 ft. bgs	40.459289	-104.473321	1.1	0.0
SS08 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459321	-104.473300	1.1	0.0
SS09 @ 6'	2/28/2022	6 ft. bgs	40.459321	-104.473300	1.1	0.0
BKG02 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459200	-104.473187	1.2	0.0
BKG02 @ 6'	2/28/2022	6 ft. bgs	40.459200	-104.473187	1.2	0.0
BKG02 @ 7'	2/28/2022	7 ft. bgs	40.459200	-104.473187	1.2	0.0
BKG03 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459358	-104.473203	1.4	0.0
BKG03 @ 6'	2/28/2022	6 ft. bgs	40.459358	-104.473203	1.4	0.0
BKG03 @ 7'	2/28/2022	7 ft. bgs	40.459358	-104.473203	1.4	0.0

**Notes:**

1. Global Positioning System (GPS) data is provided in decimal degrees using World Geodetic System (WGS) 84 UTM Zone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

in. = Inches

bgs = Below ground surface

NC = Data Not Collected

  = Source material characterization sample

## Attachment A

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 30, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

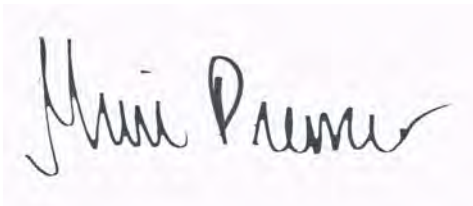
Denver, CO 80203

RE: Wells Ranch 42-30 Wellhead

Work Order #2201337

Enclosed are the results of analyses for samples received by Summit Scientific on 01/26/22 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premer", is shown on a light pink background.

Muri Premer For Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH01@6'	2201337-01	Soil	01/26/22 10:40	01/26/22 16:00
FLR01@4'	2201337-02	Soil	01/26/22 10:45	01/26/22 16:00
FL01-02@4'	2201337-03	Soil	01/26/22 11:30	01/26/22 16:00
BKG01@4'	2201337-04	Soil	01/26/22 12:20	01/26/22 16:00
BKG01@6'	2201337-05	Soil	01/26/22 12:30	01/26/22 16:00

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



$S_2$ 

303-277-9310

Page \_\_\_\_\_ of \_\_\_\_\_

Project Number:

$T_m B_s (1.24 \times 1.35)$ on 14/10/14	pH, past
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S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2201337

Client: Pac/Tasman Client Project ID: Wells Ranch 4230 wellheadShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: \_\_\_\_\_Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)Temp (°C) 5.1

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON ICE
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.
  
 Custodian Printed Name or Initials

1 24 22  
 Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**WH01@6'**  
**2201337-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFA0439	01/27/22	01/29/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0440	01/27/22	01/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		131 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**WH01@6'**  
**2201337-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0455	01/28/22	01/29/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0165</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.00899</b>	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.00683</b>	0.00500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.00627</b>	0.00500	"	"	"	"	"	"	

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		91.6 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>9.60</b>	0.356	mg/kg dry	1	BFC0082	03/04/22	03/09/22	EPA 6020B	
<b>Barium</b>	<b>231</b>	0.713	"	"	"	"	"	"	
<b>Cadmium</b>	<b>0.434</b>	0.356	"	"	"	"	"	"	
<b>Copper</b>	<b>156</b>	0.713	"	"	"	"	"	"	
<b>Lead</b>	<b>528</b>	0.356	"	"	"	"	"	"	
<b>Nickel</b>	<b>15.6</b>	0.713	"	"	"	"	"	"	
<b>Selenium</b>	<b>1.54</b>	0.463	"	"	"	"	"	"	
<b>Silver</b>	<b>0.114</b>	0.0356	"	"	"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**WH01@6'**  
**2201337-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

<b>Zinc</b>	<b>84.3</b>	0.713	mg/kg dry	1	BFC0082	03/04/22	03/09/22	EPA 6020B
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**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0265	02/22/22	02/22/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>56.1</b>		%	1	BFA0446	01/27/22	01/28/22	Calculation	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**FLR01@4'**  
**2201337-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFA0439	01/27/22	01/29/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.9 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0440	01/27/22	01/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**FLR01@4'**  
**2201337-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BFA0455	01/28/22	01/29/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		58.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.6 %	40-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**FL01-02@4'**  
**2201337-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **01/26/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFA0439	01/27/22	01/29/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/26/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.1 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/26/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0440	01/27/22	01/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		117 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**BKG01@4'**  
**2201337-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **01/26/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.56	0.211	mg/kg dry	1	BFC0432	03/21/22	03/30/22	EPA 6020B	
Barium	33.6	0.422	"	"	"	"	"	"	
Cadmium	ND	0.211	"	"	"	"	"	"	
Copper	2.23	0.422	"	"	"	"	"	"	
Lead	2.80	0.211	"	"	"	"	"	"	
Nickel	2.36	0.422	"	"	"	"	"	"	
Selenium	0.364	0.274	"	"	"	"	"	"	
Silver	ND	0.0211	"	"	"	"	"	"	
Zinc	10.5	0.422	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/26/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0265	02/22/22	02/22/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **01/26/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.8		%	1	BFB0193	02/17/22	02/17/22	Calculation	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**BKG01@6'**  
**2201337-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **01/26/22 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>1.31</b>	0.211	mg/kg dry	1	BFC0432	03/21/22	03/30/22	EPA 6020B	
<b>Barium</b>	<b>38.4</b>	0.422	"	"	"	"	"	"	
Cadmium	ND	0.211	"	"	"	"	"	"	
<b>Copper</b>	<b>2.10</b>	0.422	"	"	"	"	"	"	
<b>Lead</b>	<b>2.65</b>	0.211	"	"	"	"	"	"	
<b>Nickel</b>	<b>2.39</b>	0.422	"	"	"	"	"	"	
<b>Selenium</b>	<b>0.380</b>	0.274	"	"	"	"	"	"	
Silver	ND	0.0211	"	"	"	"	"	"	
<b>Zinc</b>	<b>10.8</b>	0.422	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/26/22 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0265	02/22/22	02/22/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **01/26/22 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>% Solids</b>	<b>94.9</b>		%	1	BFB0193	02/17/22	02/17/22	Calculation	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch BFA0439 - EPA 5030 Soil MS

##### Blank (BFA0439-BLK1)

Prepared: 01/27/22 Analyzed: 01/28/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0446		"	0.0400		112	23-173			
Surrogate: Toluene-d8	0.0423		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400		94.6	21-167			

##### LCS (BFA0439-BS1)

Prepared: 01/27/22 Analyzed: 01/28/22

Benzene	0.0691	0.0020	mg/kg	0.0750		92.2	70-130			
Toluene	0.0758	0.0050	"	0.0750		101	70-130			
Ethylbenzene	0.0691	0.0050	"	0.0750		92.2	70-130			
m,p-Xylene	0.137	0.010	"	0.150		91.2	70-130			
o-Xylene	0.0710	0.0050	"	0.0750		94.7	70-130			
1,2,4-Trimethylbenzene	0.0740	0.0050	"	0.0750		98.7	70-130			
1,3,5-Trimethylbenzene	0.0717	0.0050	"	0.0750		95.6	70-130			
Naphthalene	0.0944	0.0038	"	0.0750		126	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0428		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0434		"	0.0400		108	20-170			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.4	21-167			

##### Matrix Spike (BFA0439-MS1)

Source: 2201259-01

Prepared: 01/27/22 Analyzed: 01/28/22

Benzene	0.0735	0.0020	mg/kg	0.0750	ND	98.0	70-130			
Toluene	0.0829	0.0050	"	0.0750	ND	111	70-130			
Ethylbenzene	0.0800	0.0050	"	0.0750	ND	107	70-130			
m,p-Xylene	0.160	0.010	"	0.150	ND	107	70-130			
o-Xylene	0.0820	0.0050	"	0.0750	ND	109	70-130			
1,2,4-Trimethylbenzene	0.0868	0.0050	"	0.0750	ND	116	70-130			
1,3,5-Trimethylbenzene	0.0842	0.0050	"	0.0750	ND	112	70-130			
Naphthalene	0.0958	0.0038	"	0.0750	ND	128	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0461		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	21-167			

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BFA0439 - EPA 5030 Soil MS**

Matrix Spike Dup (BFA0439-MSD1)	Source: 2201259-01			Prepared: 01/27/22 Analyzed: 01/28/22						
Benzene	0.0763	0.0020	mg/kg	0.0750	ND	102	70-130	3.73	30	
Toluene	0.0822	0.0050	"	0.0750	ND	110	70-130	0.909	30	
Ethylbenzene	0.0827	0.0050	"	0.0750	ND	110	70-130	3.39	30	
m,p-Xylene	0.165	0.010	"	0.150	ND	110	70-130	3.13	30	
o-Xylene	0.0842	0.0050	"	0.0750	ND	112	70-130	2.60	30	
1,2,4-Trimethylbenzene	0.0896	0.0050	"	0.0750	ND	120	70-130	3.20	30	
1,3,5-Trimethylbenzene	0.0864	0.0050	"	0.0750	ND	115	70-130	2.60	30	
Naphthalene	0.0877	0.0038	"	0.0750	ND	117	70-130	8.80	30	
Surrogate: 1,2-Dichloroethane-d4	0.0453		"	0.0400		113	23-173			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.4	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch BFA0440 - EPA 3550A**

**Blank (BFA0440-BLK1)**

Prepared: 01/27/22 Analyzed: 01/28/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

**LCS (BFA0440-BS1)**

Prepared: 01/27/22 Analyzed: 01/28/22

C10-C28 (DRO)	472	50	mg/kg	500	94.4	70-130
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**Matrix Spike (BFA0440-MS1)**

**Source: 2201261-01**

Prepared: 01/27/22 Analyzed: 01/28/22

C10-C28 (DRO)	514	50	mg/kg	500	24.4	97.9	70-130
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**Matrix Spike Dup (BFA0440-MSD1)**

**Source: 2201261-01**

Prepared: 01/27/22 Analyzed: 01/28/22

C10-C28 (DRO)	530	50	mg/kg	500	24.4	101	70-130	2.95	20
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Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Limit

#### Batch BFA0455 - EPA 5030 Soil MS

##### Blank (BFA0455-BLK1)

Prepared & Analyzed: 01/28/22

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0252		"	0.0333		75.5		40-150			
Surrogate: Fluoranthene-d10	0.0273		"	0.0333		81.9		40-150			

##### LCS (BFA0455-BS1)

Prepared & Analyzed: 01/28/22

Acenaphthene	0.0302	0.00500	mg/kg	0.0333		90.5		31-137			
Anthracene	0.0325	0.00500	"	0.0333		97.5		30-120			
Benzo (a) anthracene	0.0359	0.00500	"	0.0333		108		30-120			
Benzo (a) pyrene	0.0292	0.00500	"	0.0333		87.5		30-120			
Benzo (b) fluoranthene	0.0290	0.00500	"	0.0333		86.9		30-120			
Benzo (k) fluoranthene	0.0276	0.00500	"	0.0333		82.9		30-120			
Chrysene	0.0324	0.00500	"	0.0333		97.1		30-120			
Dibenz (a,h) anthracene	0.0299	0.00500	"	0.0333		89.6		30-120			
Fluoranthene	0.0333	0.00500	"	0.0333		99.9		30-120			
Fluorene	0.0318	0.00500	"	0.0333		95.3		30-120			
Indeno (1,2,3-cd) pyrene	0.0277	0.00500	"	0.0333		83.1		30-120			
Pyrene	0.0308	0.00500	"	0.0333		92.5		35-142			
1-Methylnaphthalene	0.0314	0.00500	"	0.0333		94.2		35-142			
2-Methylnaphthalene	0.0306	0.00500	"	0.0333		91.7		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0301		"	0.0333		90.2		40-150			
Surrogate: Fluoranthene-d10	0.0345		"	0.0333		104		40-150			

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

#### Batch BFA0455 - EPA 5030 Soil MS

##### Matrix Spike (BFA0455-MS1)

Source: 2201300-01

Prepared: 01/28/22 Analyzed: 01/29/22

Acenaphthene	0.0214	0.00500	mg/kg	0.0333	ND	64.3	31-137		
Anthracene	0.0237	0.00500	"	0.0333	ND	71.0	30-120		
Benzo (a) anthracene	0.0257	0.00500	"	0.0333	ND	77.1	30-120		
Benzo (a) pyrene	0.0203	0.00500	"	0.0333	ND	60.8	30-120		
Benzo (b) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.7	30-120		
Benzo (k) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.2	30-120		
Chrysene	0.0226	0.00500	"	0.0333	ND	67.8	30-120		
Dibenz (a,h) anthracene	0.0207	0.00500	"	0.0333	ND	62.2	30-120		
Fluoranthene	0.0239	0.00500	"	0.0333	ND	71.7	30-120		
Fluorene	0.0223	0.00500	"	0.0333	ND	66.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0194	0.00500	"	0.0333	ND	58.1	30-120		
Pyrene	0.0227	0.00500	"	0.0333	ND	68.0	35-142		
1-Methylnaphthalene	0.0216	0.00500	"	0.0333	ND	64.9	15-130		
2-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.6	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0223		"	0.0333		67.0	40-150		
Surrogate: Fluoranthene-d10	0.0254		"	0.0333		76.2	40-150		

##### Matrix Spike Dup (BFA0455-MSD1)

Source: 2201300-01

Prepared: 01/28/22 Analyzed: 01/29/22

Acenaphthene	0.0219	0.00500	mg/kg	0.0333	ND	65.8	31-137	2.32	30
Anthracene	0.0258	0.00500	"	0.0333	ND	77.4	30-120	8.70	30
Benzo (a) anthracene	0.0288	0.00500	"	0.0333	ND	86.4	30-120	11.5	30
Benzo (a) pyrene	0.0227	0.00500	"	0.0333	ND	68.2	30-120	11.6	30
Benzo (b) fluoranthene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	13.1	30
Benzo (k) fluoranthene	0.0197	0.00500	"	0.0333	ND	59.0	30-120	8.42	30
Chrysene	0.0242	0.00500	"	0.0333	ND	72.7	30-120	6.89	30
Dibenz (a,h) anthracene	0.0243	0.00500	"	0.0333	ND	73.0	30-120	15.9	30
Fluoranthene	0.0260	0.00500	"	0.0333	ND	78.1	30-120	8.61	30
Fluorene	0.0239	0.00500	"	0.0333	ND	71.7	30-120	6.85	30
Indeno (1,2,3-cd) pyrene	0.0238	0.00500	"	0.0333	ND	71.4	30-120	20.5	30
Pyrene	0.0248	0.00500	"	0.0333	ND	74.3	35-142	8.97	30
1-Methylnaphthalene	0.0265	0.00500	"	0.0333	ND	79.6	15-130	20.4	50
2-Methylnaphthalene	0.0244	0.00500	"	0.0333	ND	73.1	15-130	10.7	50
Surrogate: 2-Methylnaphthalene-d10	0.0255		"	0.0333		76.4	40-150		
Surrogate: Fluoranthene-d10	0.0280		"	0.0333		83.9	40-150		

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0082 - EPA 3050B**

**Blank (BFC0082-BLK1)**

Prepared: 03/04/22 Analyzed: 03/09/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

**LCS (BFC0082-BS1)**

Prepared: 03/04/22 Analyzed: 03/09/22

Arsenic	40.5	0.200	mg/kg wet	40.0	101	80-120
Barium	34.7	0.400	"	40.0	86.7	80-120
Cadmium	1.81	0.200	"	2.00	90.7	80-120
Copper	36.3	0.400	"	40.0	90.8	80-120
Lead	17.2	0.200	"	20.0	85.8	80-120
Nickel	34.7	0.400	"	40.0	86.8	80-120
Selenium	3.33	0.260	"	4.00	83.3	80-120
Silver	1.84	0.0200	"	2.00	91.8	80-120
Zinc	41.3	0.400	"	40.0	103	80-120

**Duplicate (BFC0082-DUP1)**

Source: 2203001-09

Prepared: 03/04/22 Analyzed: 03/09/22

Arsenic	1.39	0.204	mg/kg dry	1.44	3.69	20
Barium	7.83	0.407	"	7.52	4.06	20
Cadmium	0.0754	0.204	"	0.0779	3.20	20
Copper	4.33	0.407	"	4.33	0.169	20
Lead	3.65	0.204	"	3.65	0.0954	20
Nickel	1.10	0.407	"	1.09	1.22	20
Selenium	0.777	0.265	"	0.757	2.61	20
Silver	0.0631	0.0204	"	0.0616	2.32	20
Zinc	13.4	0.407	"	13.1	1.97	20

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0082 - EPA 3050B**

**Matrix Spike (BFC0082-MS1)**

Source: 2203001-09

Prepared: 03/04/22 Analyzed: 03/09/22

Arsenic	43.3	0.204	mg/kg dry	40.7	1.44	103	75-125		
Barium	41.4	0.407	"	40.7	7.52	83.2	75-125		
Cadmium	1.90	0.204	"	2.04	0.0779	89.4	75-125		
Copper	40.5	0.407	"	40.7	4.33	88.8	75-125		
Lead	20.1	0.204	"	20.4	3.65	80.7	75-125		
Nickel	35.9	0.407	"	40.7	1.09	85.4	75-125		
Selenium	4.06	0.265	"	4.07	0.757	81.2	75-125		
Silver	1.82	0.0204	"	2.04	0.0616	86.2	75-125		
Zinc	57.1	0.407	"	40.7	13.1	108	75-125		

**Matrix Spike Dup (BFC0082-MSD1)**

Source: 2203001-09

Prepared: 03/04/22 Analyzed: 03/09/22

Arsenic	43.7	0.204	mg/kg dry	40.7	1.44	104	75-125	0.926	25
Barium	43.9	0.407	"	40.7	7.52	89.4	75-125	5.89	25
Cadmium	1.91	0.204	"	2.04	0.0779	90.0	75-125	0.597	25
Copper	40.9	0.407	"	40.7	4.33	89.7	75-125	0.958	25
Lead	20.1	0.204	"	20.4	3.65	80.9	75-125	0.227	25
Nickel	36.3	0.407	"	40.7	1.09	86.4	75-125	1.13	25
Selenium	4.03	0.265	"	4.07	0.757	80.3	75-125	0.883	25
Silver	1.84	0.0204	"	2.04	0.0616	87.5	75-125	1.51	25
Zinc	55.4	0.407	"	40.7	13.1	104	75-125	3.07	25

**Batch BFC0432 - EPA 3050B**

**Blank (BFC0432-BLK1)**

Prepared: 03/21/22 Analyzed: 03/30/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0432 - EPA 3050B**

**LCS (BFC0432-BS1)**

Prepared: 03/21/22 Analyzed: 03/30/22

Arsenic	39.0	0.200	mg/kg wet	40.0		97.5	80-120			
Barium	36.4	0.400	"	40.0		91.0	80-120			
Cadmium	1.91	0.200	"	2.00		95.6	80-120			
Copper	37.1	0.400	"	40.0		92.7	80-120			
Lead	18.6	0.200	"	20.0		92.8	80-120			
Nickel	35.5	0.400	"	40.0		88.7	80-120			
Selenium	3.52	0.260	"	4.00		88.1	80-120			
Silver	1.83	0.0200	"	2.00		91.5	80-120			
Zinc	40.5	0.400	"	40.0		101	80-120			

**Duplicate (BFC0432-DUP1)**

Source: 2203307-01

Prepared: 03/21/22 Analyzed: 03/30/22

Arsenic	5.13	0.246	mg/kg dry		4.81			6.55	20	
Barium	138	0.492	"		132			4.09	20	
Cadmium	0.290	0.246	"		0.342			16.5	20	
Copper	12.7	0.492	"		12.6			1.25	20	
Lead	9.82	0.246	"		10.4			5.91	20	
Nickel	11.4	0.492	"		10.6			6.99	20	
Selenium	0.969	0.320	"		0.929			4.25	20	
Silver	0.0773	0.0246	"		0.0750			3.12	20	
Zinc	43.3	0.492	"		42.1			2.71	20	

**Matrix Spike (BFC0432-MS1)**

Source: 2203307-01

Prepared: 03/21/22 Analyzed: 03/30/22

Arsenic	55.1	0.246	mg/kg dry	49.2	4.81	102	75-125			
Barium	191	0.492	"	49.2	132	118	75-125			
Cadmium	2.50	0.246	"	2.46	0.342	87.5	75-125			
Copper	57.4	0.492	"	49.2	12.6	91.1	75-125			
Lead	29.4	0.246	"	24.6	10.4	77.0	75-125			
Nickel	54.9	0.492	"	49.2	10.6	90.1	75-125			
Selenium	4.91	0.320	"	4.92	0.929	81.0	75-125			
Silver	2.09	0.0246	"	2.46	0.0750	81.7	75-125			
Zinc	89.8	0.492	"	49.2	42.1	96.9	75-125			

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0432 - EPA 3050B**

Matrix Spike Dup (BFC0432-MSD1)		Source: 2203307-01			Prepared: 03/21/22 Analyzed: 03/30/22					
Arsenic	51.5	0.246	mg/kg dry	49.2	4.81	95.0	75-125	6.74	25	
Barium	197	0.492	"	49.2	132	131	75-125	3.06	25	QM-05
Cadmium	2.29	0.246	"	2.46	0.342	79.0	75-125	8.78	25	
Copper	51.0	0.492	"	49.2	12.6	78.0	75-125	11.9	25	
Lead	32.6	0.246	"	24.6	10.4	90.3	75-125	10.6	25	
Nickel	51.1	0.492	"	49.2	10.6	82.3	75-125	7.25	25	
Selenium	4.74	0.320	"	4.92	0.929	77.4	75-125	3.70	25	
Silver	1.94	0.0246	"	2.46	0.0750	75.9	75-125	7.07	25	
Zinc	83.8	0.492	"	49.2	42.1	84.8	75-125	6.86	25	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BFB0265 - 3060A Mod**

**Blank (BFB0265-BLK1)**

Prepared & Analyzed: 02/22/22

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BFB0265-BS1)**

Prepared & Analyzed: 02/22/22

Chromium, Hexavalent 27.4 0.30 mg/kg wet 25.0 110 80-120

**Duplicate (BFB0265-DUP1)**

**Source: 2201337-01**

Prepared & Analyzed: 02/22/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BFB0265-MS1)**

**Source: 2201337-01**

Prepared & Analyzed: 02/22/22

Chromium, Hexavalent 50.1 0.30 mg/kg dry 44.5 ND 112 75-125

**Matrix Spike Dup (BFB0265-MSD1)**

**Source: 2201337-01**

Prepared & Analyzed: 02/22/22

Chromium, Hexavalent 46.1 0.30 mg/kg dry 44.5 ND 104 75-125 8.15 20

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch BFA0446 - General Preparation**

**Duplicate (BFA0446-DUP1)**      **Source: 2201307-03**      Prepared: 01/27/22 Analyzed: 01/28/22

% Solids	84.5	%	84.3	0.253	20
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**Batch BFB0193 - General Preparation**

**Duplicate (BFB0193-DUP1)**      **Source: 2201337-04**      Prepared & Analyzed: 02/17/22

% Solids	93.9	%	94.8	0.924	20
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Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 13, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Wells Ranch 42-30 Wellhead

Work Order #2202365

Enclosed are the results of analyses for samples received by Summit Scientific on 02/28/22 14:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Muri Premer  
Project Manager



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@7'	2202365-01	Soil	02/28/22 10:15	02/28/22 14:30
SS02@2.5'	2202365-02	Soil	02/28/22 10:18	02/28/22 14:30
SS03@6'	2202365-03	Soil	02/28/22 10:20	02/28/22 14:30
SS05@6'	2202365-05	Soil	02/28/22 10:26	02/28/22 14:30
SS07@6'	2202365-07	Soil	02/28/22 10:34	02/28/22 14:30
SS09@6'	2202365-09	Soil	02/28/22 10:40	02/28/22 14:30
BKG02@2.5'	2202365-10	Soil	02/28/22 11:20	02/28/22 14:30
BKG02@6'	2202365-11	Soil	02/28/22 11:25	02/28/22 14:30
BKG02@7'	2202365-12	Soil	02/28/22 11:35	02/28/22 14:30
BKG03@2.5'	2202365-13	Soil	02/28/22 11:50	02/28/22 14:30
BKG03@6'	2202365-14	Soil	02/28/22 12:00	02/28/22 14:30
BKG03@7'	2202365-15	Soil	02/28/22 12:05	02/28/22 14:30

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

# Summit Scientific

7702365.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310

Page 1 of 2

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Wells Ranch 42-30 Wellhead  
Sampler Name: David Vigil Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	TMBs (1,2,4)&(1,3,5)	PAH - 915	Metals - 915				
1	SS01 @ 7'	2/28/22	1015	3			X			X				X	X			X	X				pH, EC, SAR by saturated paste
2	SS02 @ 2.5'		1018	3			X			X				X	X			X	X				SAR, EC, pH, B
3	SS03 @ 6'		1020	3			X			X				X	X			X	X				
4	SS04 @ 2.5'		1024	3			X			X											X		
5	SS05 @ 6'		1026	3			X			X				X	X			X	X				
6	SS06 @ 2.5'		1030	3			X			X											X		
7	SS07 @ 6'		1034	3			X			X				X	X			X	X				
8	SS08 @ 2.5'		1038	3			X			X											X		
9	SS09 @ 6'		1040	3			X			X				X	X			X	X				
10																							

Relinquished by: <i>David Vigil</i>	Date/Time: 2/28/22 1430	Received by: Tasman's Lock Box	Date/Time:	Turn Around Time (Check)	Notes: PAHs: - chrysene - pyrene - 1-M - 2-M
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: <i>[Signature]</i>	Date/Time: 2/28/22 1430	Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 9.1 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	



## 52

2702365.2

303-277-9310

Page 2 of 2

Project Manager: Mark Longhurst

E-Mail: [mark.longhurst@PDCE.com](mailto:mark.longhurst@PDCE.com)


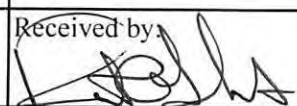
---

Phone: 303-487-1228

Project Name: Wells Ranch 42-30 Wellhead

Sampler Name: David Vigor

Project Number:

					Preservative				Matrix				Analysis Requested								Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	TMBs (1,2,4)&(1,3,5)	PAH - 915	Metals - 915		pH, EC, SAR by saturated paste		
1	BKG0202.5'	2/28/22	1120	1			X			X										X			
2	BKG0206'	↓	1125	1			X			X										X			
3	BKG0207'		1135	1			X			X										X			
4	BKG0302.5'		1150	1			X			X										X			
5	BKG0306'	↓	1200	1			X			X										X			
6	BKG0307'	✓	1205	1			X			X										X			
7																							
8																							
9																							
10																							
Relinquished by: 		Date/Time: 2/28/22 1430		Received by: Tasman's Lock Box				Date/Time:				Turn Around Time (Check)		Notes:									
Relinquished by: Tasman's Lock Box		Date/Time:		Received by: 				Date/Time: 2/28/22 1430				Same Day _____ 72 hours _____											
												24 hours _____ Standard <input checked="" type="checkbox"/>											
Relinquished by:		Date/Time:		Received by:				Date/Time:				48 hours _____		Sample Integrity: 9.1									
Relinquished by:		Date/Time:		Received by:				Date/Time:				Temperature Upon Receipt: 9.1											
												Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No											

S<sub>2</sub>

2/2

## Sample Receipt Checklist

S2 Work Order#

7707365

Client: Poc / Hasman Client Project ID: Well 5 Ranch 42-30 wellheadShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: \_\_\_\_\_
☐ ☒ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	9.1
-----------	-----

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.
  
 Custodian Printed Name or Initials

2-28-22  
 Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS01@7'**  
**2202365-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.3 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.8 %	70-130		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	<b>240</b>	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.0 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS01@7'**  
**2202365-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Chrysene</b>	<b>0.00998</b>	0.00500	mg/kg	1	BFC0078	03/04/22	03/06/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		64.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.1 %	40-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS02@2.5'**  
**2202365-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0557	0.0100	mg/L	1	BFC0439	03/21/22	03/29/22	EPA 6020B	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	15.5	0.0560	mg/L dry	1	BFC0433	03/21/22	04/01/22	EPA 6020B	
Magnesium	1.28	0.0560	"	"	"	"	"	"	
Sodium	0.785	0.0560	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0515	0.00100	units	1	BFD0035	04/02/22	04/04/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.3		%	1	BFC0438	03/21/22	03/21/22	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.35	0.0100	mmhos/cm	1	BFC0017	03/01/22	03/01/22	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS02@2.5'**  
**2202365-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>pH</b>	<b>7.91</b>			pH Units	1	BFC0020	03/01/22	03/01/22	EPA 9045D	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS03@6'**  
**2202365-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.8 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.5 %	70-130		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.0 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS03@6'**  
**2202365-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		62.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		48.3 %	40-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS05@6'**  
**2202365-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.3 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %	70-130		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		82.2 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS05@6'**  
**2202365-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		56.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.1 %	40-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS07@6'**  
**2202365-07 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.6 %	70-130		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		83.7 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS07@6'**  
**2202365-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		40.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.7 %	40-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS09@6'**  
**2202365-09 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.8 %	70-130		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		76.8 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**SS09@6'**  
**2202365-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		58.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		45.4 %	40-150		"	"	"	"	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**BKG02@2.5'**  
**2202365-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.32	0.215	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	79.2	0.430	"	"	"	"	"	"	
Cadmium	ND	0.215	"	"	"	"	"	"	
Copper	3.56	0.430	"	"	"	"	"	"	
Lead	4.59	0.215	"	"	"	"	"	"	
Nickel	3.61	0.430	"	"	"	"	"	"	
Selenium	0.508	0.279	"	"	"	"	"	"	
Silver	0.0254	0.0215	"	"	"	"	"	"	
Zinc	14.2	0.430	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.1		%	1	BFC0438	03/21/22	03/21/22	Calculation	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**BKG02@6'**  
**2202365-11 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.39	0.211	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	84.0	0.421	"	"	"	"	"	"	
Cadmium	ND	0.211	"	"	"	"	"	"	
Copper	2.88	0.421	"	"	"	"	"	"	
Lead	4.20	0.211	"	"	"	"	"	"	
Nickel	3.44	0.421	"	"	"	"	"	"	
Selenium	0.496	0.274	"	"	"	"	"	"	
Silver	ND	0.0211	"	"	"	"	"	"	
Zinc	12.8	0.421	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.9		%	1	BFC0438	03/21/22	03/21/22	Calculation	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**BKG02@7'**  
**2202365-12 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	<b>1.68</b>	0.216	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	<b>85.4</b>	0.432	"	"	"	"	"	"	
Cadmium	ND	0.216	"	"	"	"	"	"	
Copper	<b>4.25</b>	0.432	"	"	"	"	"	"	
Lead	<b>5.10</b>	0.216	"	"	"	"	"	"	
Nickel	<b>4.93</b>	0.432	"	"	"	"	"	"	
Selenium	<b>0.620</b>	0.281	"	"	"	"	"	"	
Silver	<b>0.0313</b>	0.0216	"	"	"	"	"	"	
Zinc	<b>17.3</b>	0.432	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	<b>92.7</b>		%	1	BFC0438	03/21/22	03/21/22	Calculation	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**BKG03@2.5'**  
**2202365-13 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.43	0.215	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	67.8	0.431	"	"	"	"	"	"	
Cadmium	ND	0.215	"	"	"	"	"	"	
Copper	3.70	0.431	"	"	"	"	"	"	
Lead	4.49	0.215	"	"	"	"	"	"	
Nickel	3.81	0.431	"	"	"	"	"	"	
Selenium	0.541	0.280	"	"	"	"	"	"	
Silver	0.0217	0.0215	"	"	"	"	"	"	
Zinc	14.4	0.431	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.9		%	1	BFC0438	03/21/22	03/21/22	Calculation	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**BKG03@6'**  
**2202365-14 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.35	0.212	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	80.2	0.425	"	"	"	"	"	"	
Cadmium	ND	0.212	"	"	"	"	"	"	
Copper	2.86	0.425	"	"	"	"	"	"	
Lead	4.10	0.212	"	"	"	"	"	"	
Nickel	3.65	0.425	"	"	"	"	"	"	
Selenium	0.492	0.276	"	"	"	"	"	"	
Silver	0.0249	0.0212	"	"	"	"	"	"	
Zinc	13.4	0.425	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.2		%	1	BFC0438	03/21/22	03/21/22	Calculation	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**BKG03@7'**  
**2202365-15 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.83	0.213	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	96.1	0.426	"	"	"	"	"	"	
Cadmium	ND	0.213	"	"	"	"	"	"	
Copper	3.65	0.426	"	"	"	"	"	"	
Lead	4.84	0.213	"	"	"	"	"	"	
Nickel	4.98	0.426	"	"	"	"	"	"	
Selenium	0.607	0.277	"	"	"	"	"	"	
Silver	0.0294	0.0213	"	"	"	"	"	"	
Zinc	17.8	0.426	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.0		%	1	BFC0438	03/21/22	03/21/22	Calculation	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

#### Batch BFC0036 - EPA 5030 Soil MS

##### Blank (BFC0036-BLK1)

Prepared: 03/02/22 Analyzed: 03/03/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0391		"	0.0400		97.6	70-130			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	70-130			

##### LCS (BFC0036-BS1)

Prepared: 03/02/22 Analyzed: 03/03/22

Benzene	0.0655	0.0020	mg/kg	0.0750		87.4	70-130			
Toluene	0.0670	0.0050	"	0.0750		89.3	70-130			
Ethylbenzene	0.0636	0.0050	"	0.0750		84.8	70-130			
m,p-Xylene	0.132	0.010	"	0.150		88.2	70-130			
o-Xylene	0.0689	0.0050	"	0.0750		91.8	70-130			
1,2,4-Trimethylbenzene	0.0707	0.0050	"	0.0750		94.3	70-130			
1,3,5-Trimethylbenzene	0.0677	0.0050	"	0.0750		90.3	70-130			
Naphthalene	0.0756	0.0038	"	0.0750		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0400		99.2	70-130			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	70-130			

##### Matrix Spike (BFC0036-MS1)

Source: 2202363-03

Prepared: 03/02/22 Analyzed: 03/03/22

Benzene	0.0642	0.0020	mg/kg	0.0750	ND	85.6	70-130			
Toluene	0.0692	0.0050	"	0.0750	ND	92.2	70-130			
Ethylbenzene	0.0682	0.0050	"	0.0750	ND	90.9	70-130			
m,p-Xylene	0.140	0.010	"	0.150	ND	93.6	70-130			
o-Xylene	0.0739	0.0050	"	0.0750	ND	98.5	70-130			
1,2,4-Trimethylbenzene	0.0761	0.0050	"	0.0750	ND	101	70-130			
1,3,5-Trimethylbenzene	0.0737	0.0050	"	0.0750	ND	98.2	70-130			
Naphthalene	0.0902	0.0038	"	0.0750	ND	120	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0400		98.2	70-130			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	70-130			

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0036 - EPA 5030 Soil MS**

Matrix Spike Dup (BFC0036-MSD1)	Source: 2202363-03			Prepared: 03/02/22 Analyzed: 03/03/22						
Benzene	0.0622	0.0020	mg/kg	0.0750	ND	83.0	70-130	3.09	30	
Toluene	0.0664	0.0050	"	0.0750	ND	88.5	70-130	4.16	30	
Ethylbenzene	0.0617	0.0050	"	0.0750	ND	82.3	70-130	9.93	30	
m,p-Xylene	0.127	0.010	"	0.150	ND	84.5	70-130	10.2	30	
o-Xylene	0.0661	0.0050	"	0.0750	ND	88.1	70-130	11.2	30	
1,2,4-Trimethylbenzene	0.0699	0.0050	"	0.0750	ND	93.2	70-130	8.46	30	
1,3,5-Trimethylbenzene	0.0668	0.0050	"	0.0750	ND	89.0	70-130	9.87	30	
Naphthalene	0.0875	0.0038	"	0.0750	ND	117	70-130	2.97	30	
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	70-130			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		97.9	70-130			

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting			Spike	Source	%REC		RPD		
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	

**Batch BFC0037 - EPA 3550A**

**Blank (BFC0037-BLK1)**

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

**LCS (BFC0037-BS1)**

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	435	50	mg/kg	500	87.0	70-130
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**Matrix Spike (BFC0037-MS1)**

Source: 2202363-01

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	480	50	mg/kg	500	117	72.6	70-130
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**Matrix Spike Dup (BFC0037-MSD1)**

Source: 2202363-01

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	475	50	mg/kg	500	117	71.6	70-130	1.03	20
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Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

### PAH by EPA Method 8270D SIM - Quality Control

#### Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch BFC0078 - EPA 5030 Soil MS

##### Blank (BFC0078-BLK1)

Prepared: 03/04/22 Analyzed: 03/06/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0241		"	0.0333		72.3	40-150			
Surrogate: Fluoranthene-d10	0.0236		"	0.0333		70.9	40-150			

##### LCS (BFC0078-BS1)

Prepared: 03/04/22 Analyzed: 03/06/22

Acenaphthene	0.0221	0.00500	mg/kg	0.0333	66.3	31-137
Anthracene	0.0225	0.00500	"	0.0333	67.6	30-120
Benzo (a) anthracene	0.0254	0.00500	"	0.0333	76.2	30-120
Benzo (a) pyrene	0.0187	0.00500	"	0.0333	56.1	30-120
Benzo (b) fluoranthene	0.0188	0.00500	"	0.0333	56.3	30-120
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333	53.7	30-120
Chrysene	0.0244	0.00500	"	0.0333	73.3	30-120
Dibenz (a,h) anthracene	0.0231	0.00500	"	0.0333	69.4	30-120
Fluoranthene	0.0211	0.00500	"	0.0333	63.2	30-120
Fluorene	0.0225	0.00500	"	0.0333	67.4	30-120
Indeno (1,2,3-cd) pyrene	0.0152	0.00500	"	0.0333	45.5	30-120
Pyrene	0.0261	0.00500	"	0.0333	78.2	35-142
1-Methylnaphthalene	0.0233	0.00500	"	0.0333	69.9	35-142
2-Methylnaphthalene	0.0224	0.00500	"	0.0333	67.2	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0247		"	0.0333	74.0	40-150
Surrogate: Fluoranthene-d10	0.0220		"	0.0333	65.9	40-150

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Limit

#### Batch BFC0078 - EPA 5030 Soil MS

##### Matrix Spike (BFC0078-MS1)

Source: 2202284-01

Prepared: 03/04/22 Analyzed: 03/06/22

Acenaphthene	0.0218	0.00500	mg/kg	0.0333	ND	65.5	31-137				
Anthracene	0.0229	0.00500	"	0.0333	ND	68.6	30-120				
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.7	30-120				
Benzo (a) pyrene	0.0189	0.00500	"	0.0333	ND	56.7	30-120				
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.4	30-120				
Benzo (k) fluoranthene	0.0196	0.00500	"	0.0333	ND	58.9	30-120				
Chrysene	0.0247	0.00500	"	0.0333	ND	74.2	30-120				
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	ND	46.4	30-120				
Fluoranthene	0.0227	0.00500	"	0.0333	ND	68.0	30-120				
Fluorene	0.0221	0.00500	"	0.0333	ND	66.3	30-120				
Indeno (1,2,3-cd) pyrene	0.0104	0.00500	"	0.0333	ND	31.1	30-120				
Pyrene	0.0260	0.00500	"	0.0333	ND	78.0	35-142				
1-Methylnaphthalene	0.0230	0.00500	"	0.0333	ND	69.1	15-130				
2-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.1	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0233		"	0.0333		69.8	40-150				
Surrogate: Fluoranthene-d10	0.0236		"	0.0333		70.9	40-150				

##### Matrix Spike Dup (BFC0078-MSD1)

Source: 2202284-01

Prepared: 03/04/22 Analyzed: 03/06/22

Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.6	31-137	11.1	30
Anthracene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	8.47	30
Benzo (a) anthracene	0.0252	0.00500	"	0.0333	ND	75.5	30-120	1.63	30
Benzo (a) pyrene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	1.42	30
Benzo (b) fluoranthene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	2.79	30
Benzo (k) fluoranthene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	1.78	30
Chrysene	0.0237	0.00500	"	0.0333	ND	71.2	30-120	4.08	30
Dibenz (a,h) anthracene	0.0141	0.00500	"	0.0333	ND	42.3	30-120	9.37	30
Fluoranthene	0.0234	0.00500	"	0.0333	ND	70.3	30-120	3.29	30
Fluorene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	8.55	30
Indeno (1,2,3-cd) pyrene	0.0105	0.00500	"	0.0333	ND	31.5	30-120	1.27	30
Pyrene	0.0274	0.00500	"	0.0333	ND	82.2	35-142	5.19	30
1-Methylnaphthalene	0.0220	0.00500	"	0.0333	ND	66.0	15-130	4.66	50
2-Methylnaphthalene	0.0206	0.00500	"	0.0333	ND	61.8	15-130	0.350	50
Surrogate: 2-Methylnaphthalene-d10	0.0223		"	0.0333		66.9	40-150		
Surrogate: Fluoranthene-d10	0.0222		"	0.0333		66.7	40-150		

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0439 - EPA 3050B**

**Blank (BFC0439-BLK1)**

Prepared: 03/21/22 Analyzed: 03/29/22

Boron ND 0.0100 mg/L

**LCS (BFC0439-BS1)**

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 5.26 0.0100 mg/L 5.00 105 80-120

**Duplicate (BFC0439-DUP1)**

**Source: 2202350-01**

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 0.116 0.0100 mg/L 0.123 5.86 20

**Matrix Spike (BFC0439-MS1)**

**Source: 2202350-01**

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 5.52 0.0100 mg/L 5.00 0.123 108 75-125

**Matrix Spike Dup (BFC0439-MSD1)**

**Source: 2202350-01**

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 5.98 0.0100 mg/L 5.00 0.123 117 75-125 7.97 25

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0436 - EPA 3050B**

**Blank (BFC0436-BLK1)**

Prepared: 03/21/22 Analyzed: 03/22/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

**LCS (BFC0436-BS1)**

Prepared: 03/21/22 Analyzed: 03/22/22

Arsenic	34.2	0.200	mg/kg wet	40.0	85.5	80-120
Barium	33.7	0.400	"	40.0	84.4	80-120
Cadmium	1.85	0.200	"	2.00	92.7	80-120
Copper	34.1	0.400	"	40.0	85.2	80-120
Lead	16.8	0.200	"	20.0	83.9	80-120
Nickel	32.9	0.400	"	40.0	82.2	80-120
Selenium	3.73	0.260	"	4.00	93.2	80-120
Silver	1.75	0.0200	"	2.00	87.7	80-120
Zinc	36.4	0.400	"	40.0	90.9	80-120

**Duplicate (BFC0436-DUP1)**

Source: 2202303-01

Prepared: 03/21/22 Analyzed: 03/22/22

Arsenic	1.45	0.219	mg/kg dry	1.48	1.45	20	
Barium	74.9	0.438	"	60.5	21.2	20	QR-03
Cadmium	0.179	0.219	"	0.151	17.3	20	
Copper	8.21	0.438	"	6.25	27.1	20	QR-03
Lead	18.7	0.219	"	14.2	26.8	20	QR-03
Nickel	6.38	0.438	"	5.18	20.8	20	QR-03
Selenium	0.567	0.285	"	0.448	23.4	20	QR-03
Silver	0.0378	0.0219	"	0.0349	7.92	20	
Zinc	33.6	0.438	"	27.8	18.9	20	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0436 - EPA 3050B**

Matrix Spike (BFC0436-MS1)		Source: 2202303-01			Prepared: 03/21/22 Analyzed: 03/22/22					
Arsenic	41.6	0.219	mg/kg dry	43.8	1.48	91.6	75-125			
Barium	103	0.438	"	43.8	60.5	96.5	75-125			
Cadmium	2.07	0.219	"	2.19	0.151	87.8	75-125			
Copper	43.6	0.438	"	43.8	6.25	85.4	75-125			
Lead	31.7	0.219	"	21.9	14.2	79.5	75-125			
Nickel	42.1	0.438	"	43.8	5.18	84.3	75-125			
Selenium	3.46	0.285	"	4.38	0.448	68.9	75-125			QR-03
Silver	1.80	0.0219	"	2.19	0.0349	80.7	75-125			
Zinc	76.5	0.438	"	43.8	27.8	111	75-125			

Matrix Spike Dup (BFC0436-MSD1)		Source: 2202303-01			Prepared: 03/21/22 Analyzed: 03/22/22					
Arsenic	39.4	0.219	mg/kg dry	43.8	1.48	86.6	75-125	5.47	25	
Barium	109	0.438	"	43.8	60.5	111	75-125	5.96	25	
Cadmium	2.18	0.219	"	2.19	0.151	92.7	75-125	5.08	25	
Copper	43.5	0.438	"	43.8	6.25	85.2	75-125	0.190	25	
Lead	32.6	0.219	"	21.9	14.2	83.8	75-125	2.89	25	
Nickel	41.6	0.438	"	43.8	5.18	83.1	75-125	1.18	25	
Selenium	3.53	0.285	"	4.38	0.448	70.3	75-125	1.80	25	QR-03
Silver	1.88	0.0219	"	2.19	0.0349	84.3	75-125	4.31	25	
Zinc	74.9	0.438	"	43.8	27.8	107	75-125	2.16	25	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0531 - 3060A Mod**

**Blank (BFC0531-BLK1)**

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BFC0531-BS1)**

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent 26.6 0.30 mg/kg wet 25.0 107 80-120

**Duplicate (BFC0531-DUP1)**

**Source: 2202108-02**

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BFC0531-MS1)**

**Source: 2202108-02**

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent 27.6 0.30 mg/kg dry 26.7 ND 103 75-125

**Matrix Spike Dup (BFC0531-MSD1)**

**Source: 2202108-02**

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent 31.1 0.30 mg/kg dry 26.7 ND 116 75-125 11.8 20

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0433 - General Preparation**

**Blank (BFC0433-BLK1)**

Prepared: 03/21/22 Analyzed: 04/01/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

**LCS (BFC0433-BS1)**

Prepared: 03/21/22 Analyzed: 04/01/22

Calcium	5.09	0.0500	mg/L wet	5.00	102	70-130
Magnesium	5.48	0.0500	"	5.00	110	70-130
Sodium	5.04	0.0500	"	5.00	101	70-130

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0438 - General Preparation**

**Duplicate (BFC0438-DUP1)**

**Source: 2202350-01**

**Prepared & Analyzed: 03/21/22**

% Solids	90.7	%	94.2	3.74	20
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Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0017 - General Preparation**

**Blank (BFC0017-BLK1)**

Prepared & Analyzed: 03/01/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BFC0017-BS1)**

Prepared & Analyzed: 03/01/22

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.150 98.1 95-105

**Duplicate (BFC0017-DUP1)**

**Source: 2202357-01**

Prepared & Analyzed: 03/01/22

Specific Conductance (EC) 0.557 0.0100 mmhos/cm 0.577 3.58 20

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch BFC0020 - General Preparation**

**LCS (BFC0020-BS1)**

Prepared & Analyzed: 03/01/22

pH	9.12	pH Units	9.18	99.3	95-105
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**Duplicate (BFC0020-DUP1)**

Source: 2202357-01

Prepared & Analyzed: 03/01/22

pH	8.68	pH Units	8.67	0.115	20
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Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/13/22 14:50

### Notes and Definitions

QR-03      The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

DET      Analyte DETECTED

ND      Analyte NOT DETECTED at or above the reporting limit

NR      Not Reported

dry      Sample results reported on a dry weight basis

RPD      Relative Percent Difference



**Fremont**  
*Analytical*

3600 Fremont Ave. N.  
Seattle, WA 98103  
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info@fremontanalytical.com

**Summit Scientific**  
Paul Shrewsbury  
4653 Table Mountain Dr  
Golden, CO 80403

**RE: 2201337**  
**Work Order Number: 2201527**

March 21, 2022

**Attention Paul Shrewsbury:**

Fremont Analytical, Inc. received 2 sample(s) on 1/31/2022 for the analyses presented in the following report.

***Conductivity by SM 2510B***  
***pH by SM 4500H+B***  
***Sample Moisture (Percent Moisture)***  
***Sodium Adsorption Ratio***  
***Total Metals by EPA Method 6020B***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes  
Project Manager

**CC:**  
Muri Premer  
Paul Shrewsbury

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing*  
*ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing*  
*Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

[www.fremontanalytical.com](http://www.fremontanalytical.com)



Date: 03/21/2022

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**CLIENT:** Summit Scientific  
**Project:** 2201337  
**Work Order:** 2201527

---

## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2201527-001	WH01@6'	01/26/2022 10:40 AM	01/31/2022 9:44 AM
2201527-001	WH01@6'	01/26/2022 10:40 AM	01/31/2022 9:44 AM
2201527-002	FLR01@4'	01/26/2022 10:45 AM	01/31/2022 9:44 AM

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Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

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Original

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**CLIENT:** Summit Scientific**Project:** 2201337

---

**I. SAMPLE RECEIPT:**

Samples receipt information is recorded on the attached Sample Receipt Checklist.

**II. GENERAL REPORTING COMMENTS:**

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

**III. ANALYSES AND EXCEPTIONS:**

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

The following preparation methods were performed per client request:

Boron was prepared using Hot Water Soluble Method provided by client.

Conductivity, Sodium Adsorption Ratio, and pH were prepared Saturated Paste Method provided by client.

**Qualifiers:**

- \* - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

**Acronyms:**

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



## Analytical Report

Work Order: 2201527  
Date Reported: 3/21/2022

CLIENT: Summit Scientific

Project: 2201337

Lab ID: 2201527-001

Client Sample ID: WH01 @6'

Collection Date: 1/26/2022 10:40:00 AM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Total Metals by EPA Method 6020B</u></b>				Batch ID: 35417 Analyst: EH		
Boron	0.627	0.00954		mg/L	1	3/10/2022 9:42:53 AM
<b><u>Sodium Adsorption Ratio</u></b>				Batch ID: 35734 Analyst: WC		
Sodium Adsorption Ratio (SAR)	0.0764	0		mEq/L	1	3/15/2022 1:25:00 PM
<b><u>Sample Moisture (Percent Moisture)</u></b>				Batch ID: R73025 Analyst: ALB		
Percent Moisture	46.3	0.500		wt%	1	2/3/2022 3:21:21 PM
<b><u>Conductivity by SM 2510B</u></b>				Batch ID: R74103 Analyst: SLL		
Specific Conductance (Conductivity)	73.9	1.00		µS/cm	1	3/18/2022 2:34:13 PM
<b><u>pH by SM 4500H+B</u></b>				Batch ID: R74128 Analyst: SS		
Hydrogen Ion (pH)	8.73		H	pH	1	3/17/2022 1:30:00 PM



## Analytical Report

Work Order: 2201527  
Date Reported: 3/21/2022

CLIENT: Summit Scientific

Project: 2201337

Lab ID: 2201527-001

Client Sample ID: WH01 @6'

Collection Date: 1/26/2022 10:40:00 AM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Total Metals by EPA Method 6020B</u></b>				Batch ID: 35417		Analyst: EH
Boron	0.627	0.00954		mg/L	1	3/10/2022 9:42:53 AM
<b><u>Sodium Adsorption Ratio</u></b>				Batch ID: 35734		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.0764	0		mEq/L	1	3/15/2022 1:25:00 PM
<b><u>Sample Moisture (Percent Moisture)</u></b>				Batch ID: R73025		Analyst: ALB
Percent Moisture	46.3	0.500		wt%	1	2/3/2022 3:21:21 PM
<b><u>Conductivity by SM 2510B</u></b>				Batch ID: R74103		Analyst: SLL
Specific Conductance (Conductivity)	73.9	1.00		µS/cm	1	3/18/2022 2:34:13 PM
<b><u>pH by SM 4500H+B</u></b>				Batch ID: R74128		Analyst: SS
Hydrogen Ion (pH)	8.73		H	pH	1	3/17/2022 1:30:00 PM





## Analytical Report

Work Order: 2201527  
Date Reported: 3/21/2022

CLIENT: Summit Scientific

Project: 2201337

Lab ID: 2201527-002

Client Sample ID: FLR01@4'

Collection Date: 1/26/2022 10:45:00 AM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Total Metals by EPA Method 6020B</u></b>				Batch ID: 35417		Analyst: EH
Boron	0.236	0.00912	B	mg/L	1	3/10/2022 9:44:03 AM
<b><u>Sodium Adsorption Ratio</u></b>				Batch ID: 35734		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.0748	0		mEq/L	1	3/15/2022 1:26:00 PM
<b><u>Sample Moisture (Percent Moisture)</u></b>				Batch ID: R73025		Analyst: ALB
Percent Moisture	15.0	0.500		wt%	1	2/3/2022 3:21:21 PM
<b><u>Conductivity by SM 2510B</u></b>				Batch ID: R74103		Analyst: SLL
Specific Conductance (Conductivity)	42.3	1.00		µS/cm	1	3/18/2022 2:34:13 PM
<b><u>pH by SM 4500H+B</u></b>				Batch ID: R74128		Analyst: SS
Hydrogen Ion (pH)	8.81		H	pH	1	3/17/2022 1:30:00 PM

**Work Order:** 2201527  
**CLIENT:** Summit Scientific  
**Project:** 2201337

## QC SUMMARY REPORT

### Conductivity by SM 2510B

Sample ID: <b>MB-R74103</b>		SampType: <b>MBLK</b>			Units: <b>µS/cm</b>		Prep Date: <b>3/18/2022</b>			RunNo: <b>74103</b>		
Client ID: <b>MBLKW</b>		Batch ID: <b>R74103</b>						Analysis Date: <b>3/18/2022</b>			SeqNo: <b>1518664</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Specific Conductance (Conductivity) ND 1.00

Sample ID: <b>LCS-R74103</b>		SampType: <b>LCS</b>			Units: <b>µS/cm</b>		Prep Date: <b>3/18/2022</b>			RunNo: <b>74103</b>		
Client ID: <b>LCSW</b>		Batch ID: <b>R74103</b>			Analysis Date: <b>3/18/2022</b>			SeqNo: <b>1518665</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Specific Conductance (Conductivity) 1,050 1.00 1,000 0 105 90 110

Sample ID: <b>2201522-001ADUP</b>		SampType: <b>DUP</b>			Units: <b>µS/cm</b>		Prep Date: <b>3/18/2022</b>			RunNo: <b>74103</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>R74103</b>			Analysis Date: <b>3/18/2022</b>			SeqNo: <b>1518667</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Specific Conductance (Conductivity) 63.9 1.00 60.10 6.13 20

Sample ID: <b>LCSD-R74103</b>		SampType: <b>LCSD</b>			Units: <b>µS/cm</b>		Prep Date: <b>3/18/2022</b>			RunNo: <b>74103</b>		
Client ID: <b>LCSW02</b>		Batch ID: <b>R74103</b>						Analysis Date: <b>3/18/2022</b>			SeqNo: <b>1518684</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Specific Conductance (Conductivity) 1,040 1.00 1,000 0 104 90 110 1,048 0.574 20



Date: 3/21/2022

Work Order: 2201527  
CLIENT: Summit Scientific  
Project: 2201337

## QC SUMMARY REPORT

pH by SM 4500H+B

Sample ID: <b>MB-R74128</b>		SampType: <b>MBLK</b>			Units: <b>pH</b>		Prep Date: <b>3/17/2022</b>			RunNo: <b>74128</b>		
Client ID: <b>MBLKW</b>		Batch ID: <b>R74128</b>			Analysis Date: <b>3/17/2022</b>			SeqNo: <b>1519585</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Hydrogen Ion (pH) 7.75

Sample ID: <b>LCS-R74128</b>		SampType: <b>LCS</b>			Units: <b>pH</b>		Prep Date: <b>3/17/2022</b>			RunNo: <b>74128</b>		
Client ID: <b>LCSW</b>		Batch ID: <b>R74128</b>			Analysis Date: <b>3/17/2022</b>			SeqNo: <b>1519586</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Hydrogen Ion (pH) 7.01 7.000 0 100 95 105

Sample ID: <b>2201522-001ADUP</b>		SampType: <b>DUP</b>			Units: <b>pH</b>		Prep Date: <b>3/17/2022</b>			RunNo: <b>74128</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>R74128</b>			Analysis Date: <b>3/17/2022</b>			SeqNo: <b>1519588</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Hydrogen Ion (pH) 8.85 8.870 0.226 10 H

**Work Order:** 2201527  
**CLIENT:** Summit Scientific  
**Project:** 2201337

## QC SUMMARY REPORT

### Total Metals by EPA Method 6020B

Sample ID: <b>MB-35417</b>		SampType: <b>MBLK</b>			Units: <b>mg/L</b>		Prep Date: <b>2/17/2022</b>			RunNo: <b>73890</b>		
Client ID: <b>MBLKS</b>		Batch ID: <b>35417</b>			Analysis Date: <b>3/10/2022</b>					SeqNo: <b>1513405</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Boron	0.0380	0.0100									
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Sample ID: <b>LCS-35417</b>		SampType: <b>LCS</b>			Units: <b>mg/L</b>		Prep Date: <b>2/17/2022</b>			RunNo: <b>73890</b>		
Client ID: <b>LCSS</b>		Batch ID: <b>35417</b>			Analysis Date: <b>3/10/2022</b>					SeqNo: <b>1513406</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Boron	5.02	0.0100	5.000	0	100	80	120				
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Sample ID: <b>2201525-001BDUP</b>		SampType: <b>DUP</b>			Units: <b>mg/L</b>		Prep Date: <b>2/17/2022</b>			RunNo: <b>73890</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35417</b>			Analysis Date: <b>3/10/2022</b>					SeqNo: <b>1513408</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Boron	0.257	0.00994						0.2678	4.01	20	B
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Sample ID: <b>2201525-001BMS</b>		SampType: <b>MS</b>			Units: <b>mg/L</b>		Prep Date: <b>2/17/2022</b>			RunNo: <b>73890</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35417</b>			Analysis Date: <b>3/10/2022</b>			SeqNo: <b>1513409</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Boron	5.52	0.0100	5.015	0.2678	105	75	125				
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Sample ID: <b>2201525-001BMSD</b>		SampType: <b>MSD</b>			Units: <b>mg/L</b>		Prep Date: <b>2/17/2022</b>			RunNo: <b>73890</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35417</b>			Analysis Date: <b>3/10/2022</b>					SeqNo: <b>1513410</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Boron	5.21	0.0100	5.015	0.2678	98.6	75	125	5.524	5.77	20	
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**Work Order:** 2201527  
**CLIENT:** Summit Scientific  
**Project:** 2201337

## QC SUMMARY REPORT

### Sodium Adsorption Ratio

Sample ID: <b>MB-35734</b>		SampType: <b>MBLK</b>			Units: <b>µg/L</b>		Prep Date: <b>3/15/2022</b>			RunNo: <b>74039</b>		
Client ID: <b>MBLKW</b>		Batch ID: <b>35734</b>			Analysis Date: <b>3/15/2022</b>			SeqNo: <b>1517286</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Calcium	ND	200									
Magnesium	ND	100									
Sodium	ND	200									

Sample ID: <b>LCS-35734</b>		SampType: <b>LCS</b>			Units: <b>µg/L</b>		Prep Date: <b>3/15/2022</b>			RunNo: <b>74039</b>		
Client ID: <b>LCSW</b>		Batch ID: <b>35734</b>			Analysis Date: <b>3/15/2022</b>			SeqNo: <b>1517287</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Calcium	1,130	200	1,000	0	113	50	150				
Magnesium	1,100	100	1,000	0	110	50	150				
Sodium	1,150	200	1,000	0	115	50	150				

Sample ID: <b>2201522-001ADUP</b>		SampType: <b>DUP</b>			Units: <b>mEq/L</b>		Prep Date: <b>3/15/2022</b>			RunNo: <b>74039</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35734</b>			Analysis Date: <b>3/15/2022</b>			SeqNo: <b>1518058</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Sodium Adsorption Ratio (SAR)	0.0845	0						0.1127	28.6	30	
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Client Name: **SUMSCI**

Work Order Number: **2201527**

Logged by: **Gabrielle Coeuille**

Date Received: **1/31/2022 9:44:00 AM**

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

### Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody Seals present on shipping container/cooler?  
(Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒
6. Was an attempt made to cool the samples? Yes ☐ No ☒ NA ☐
7. Were all items received at a temperature of >2°C to 6°C \* Unknown prior to receipt Yes ☐ No ☐ NA ☒
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☒ No ☐

### Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

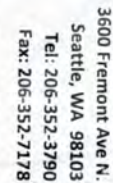
19. Additional remarks:

### Item Information

Item #	Temp °C
Sample 1	10.9

\* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C





Date: 1-27-22 Page: 1 of: 1

Project Name: 2201337

220152

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**Address:** 4653 Table Mountain Drive

City, State, Zip: Golden, CO. 80403

Telephone: 303-277-9310

Fax:	
PM Email:	mpremier@s2scientific.com, pshrewsbury@s2scientific.com

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Comments

Matrix: A = Air, AQ = Aqueous B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Turn-around Time:**

\*\*\*Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

~~Relinquished~~

Date/Time 1:27.22

Received

Date/Time

Retinquished

Date/Time

Received

Date/Time

COC 1.2 - 2.22.17

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/30/22 15:46

### Notes and Definitions

QM-05     The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET        Analyte DETECTED

ND        Analyte NOT DETECTED at or above the reporting limit

NR        Not Reported

dry        Sample results reported on a dry weight basis

RPD        Relative Percent Difference